

Progress Report
Virginia Department of Agriculture and Consumer Services
Sponsored Project – 447733, Management Practices for Specialty Market Pork Production

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Background

The principle focus of this project is to generate useful information to assist niche and specialty market pork producers with breeding and feeding decisions. The project was initiated in the Fall of 2006 at the Virginia Tech Tidewater Agricultural Research and Extension Center. Sows at the Center were strategically mated by artificial insemination with either a Berkshire boar (specialty market breed) or a terminal line Hampshire boar (conventional breed). On January 2, 2007 pigs from these matings were weaned at 3 to 4 weeks of age and 60 pigs were selected and placed on the study. Diet treatments were a series of diet formulations acceptable for natural pork labeling (no antibiotics or blood or meat product ingredients) or a series of conventional diet formulations (contained blood and meat products in the nursery and medicated throughout). The treatments arranged as a 2 x 2 factorial were: the natural diet fed to Berkshire-sired pigs, the natural diet fed to Hampshire-sired pigs, the conventional diet fed to Berkshire-sired pigs, and the conventional diet fed to Hampshire-sired pigs. There were 5 pens of 3 pigs per pen for each treatment combination. Feed and water were available free choice.

The nursery phase data for the trial was provided in an interim report submitted on March 15, 2007. There were indications at the end of the 34-day nursery phase that the Berkshire-sired pigs performed better on the “natural label” diet than the Hampshire-sired pigs.

The test pigs remained on study in grower-finisher pens until they were weighed off-test on May 14, 2007. At this point pigs had reached acceptable market weight of 240 to 280 lbs. On this same day one barrow and one gilt pig from each test pen (40 pigs total) were selected for transport to the meat processing and evaluation facility at the University of Georgia in Athens, Georgia. The principle investigator (Harper) and a student worked with faculty and technicians

at Georgia to slaughter and process the pigs and collect the following data relevant to the specialty pork trial:

Pigs Delivered: late afternoon May 14, 2007

Harvest Day (May 15, 2007)

- 1). Pre-slaughter live weight
- 2). Hot-carcass weight

Carcass Evaluation Day (May 16, 2007)

- 1). Carcass length (first rib to aitch bone)
- 2). Midline backfat (3 locations: first rib, last rib, last lumbar vertebrae)
- 3). Ultimate pH of loin muscle at 10th rib location.
- 4). Backfat at the 10th rib (ribbed carcass, loin surface exposed)
- 5). Loin muscle area (LMA) (traced onto acetate paper)
- 6). Visual assessments of loin surface color score, marbling score and firmness-wetness score as per National Pork Board published guidelines.
- 7). Hunter L value and Minolta Reflectance. (objective measure of color and brightness)
- 8). Excise the 11th and 12th rib chops using one chop for determination of water holding capacity.
- 9). Place 12th rib chop in vacuum pack bags to return to VA Tech for intramuscular lipid determination.

Key Actions to be Accomplished for Project Completion in October 2007

1. All growth rate and feed conversion data statistically analyzed to determine breed and feeding program influences.
2. All carcass data statistically analyzed to determine breed and feeding program influences.
3. All pork quality data statistically analyzed to determine breed and feeding program influences.
4. Develop complete final project report and educational “take-home” messages for niche and specialty market pork producers.

This project has generated a substantial amount of data much of which will be useful to those involved in or developing specialty pork enterprises. Furthermore the data will be useful in educational programming which the principle investigator and Virginia Cooperative Extension agents are developing for the Fall and winter of 2007.